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Hill Air Force Base, Utah

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*Final*

**Phase I Environmental Baseline Survey:  
Building 825,  
Hill Air Force Base, Utah**

December 28, 2009

**Final Phase I Environmental Baseline Survey (EBS)  
Building 825,  
Hill Air Force Base, Utah**

**Contract FA8201-08-D-0006, Order E017**

**Department of the Air Force  
Air Force Materiel Command  
Hill Air Force Base, Utah 84056  
December 28, 2009**

**Prepared in accordance with Department of the Air Force Instruction 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality***

## EXECUTIVE SUMMARY

### Purpose and Location of the Phase I Environmental Baseline Survey

Hill Air Force Base (AFB) proposes to complete a lease in the southwestern portion of the base, on which a private entity would construct and operate a steam generation facility. The subject property is currently occupied by Building 825 (a boiler plant), but also includes an accessory building with oil transfer pumps (Building 824), two large heating oil tanks (10824 and 10826), pavements, and unpaved areas. If a private entity takes over the operations at Building 825, it is expected that entity would be able to invest to modernize equipment and control systems, thereby increasing efficiency and reducing energy consumption.

This Phase I Environmental Baseline Survey (EBS) is intended to:

- document known or suspected environmental contamination of the subject property (soil, water, structures, and/or equipment);
- identify potential environmental contamination liabilities;
- establish environmental due diligence;
- develop information with which to assess health and safety risks to the extent that sampling activities were part of the project scope; and
- contribute to a process that is protective of human health and the environment.

### Survey Methodology

The Phase I EBS investigation was conducted in accordance with Department of the Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality*. Procedures documented in the AFI Chapter 2 (*Conducting Phase I of the EBS*) were followed during records searches, literature reviews, interviews, site visits, and formulation of conclusions.

Past and present ownership and land use of the subject property was determined by reviewing the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936). Hill AFB personnel were contacted regarding current use and history of the subject property. Two local history books were reviewed. Hill AFB historical maps were located and reviewed. Historical topographic maps were reviewed. Aerial photographs from a variety of time periods were reviewed. Hill AFB installation restoration program (IRP) and storage tank program records were reviewed. State of Utah records for leaking underground storage tanks were reviewed.

Forty federal and state databases were accessed by a private database specialty vendor to search for any history of hazardous waste storage, use, treatment, or disposal, and similar records for landfills and other regulated substances such as petroleum compounds and polychlorinated biphenyls. The database search met the requirements of the *Standard*

*Practice for Environmental Site Assessments*, E 1527-05, published by the American Society for Testing and Materials.

The site and adjoining properties were visually inspected on November 18, 2009.

Sampling of environmental media was not incorporated into the scope of the project. If investigators had suspected that such environmental sampling was warranted, their course of action would have been to notify Hill AFB environmental managers for the effort to be handled by others or under a separate task assignment.

## **Findings**

Prior to government ownership, the land that later became Hill AFB was used for raising turkeys and dry farmed wheat. The boiler plant (Building 825) was completed on the subject property in May of 1958.

During the site visit, no conditions were observed that would indicate presence of environmental contamination for the subject property. Petroleum products and other chemicals consistent with the operation of a boiler plant were observed to be properly stored on the subject property. Database searches did not reveal any findings regarding the presence of hazardous materials or petroleum products for the subject property.

Analytical results from soil samples collected in 1997 (a Hill AFB effort [Montgomery 1997], not part of the database searches) indicated elevated levels of petroleum hydrocarbons and volatile organic compounds in several locations on the subject property. No groundwater contamination has been detected. Lead-based paint is present on the subject property. Because Building 825 was completed in 1958, there is a potential for presence of asbestos. No other findings were noted in the EBS.

## **Conclusions and Recommendations**

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead-based paint is disturbed or removed. No construction or other activity that would disturb soil or interfere with remedial action equipment or facilities should occur without concurrence of Hill AFB environmental managers and attorneys.

No soil or groundwater samples were collected. Knowledge of subsurface conditions was gained through discussions with Hill AFB IRP personnel.

Based upon the results of the EBS, no other recommendations were prepared relative to the proposed lease at this time.

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## **1.0 PURPOSE OF THE ENVIRONMENTAL BASELINE SURVEY**

Hill Air Force Base (AFB) proposes to complete a lease in the southwestern portion of the base, on which a private entity would construct and operate a steam generation facility. The subject property is currently occupied by Building 825 (a boiler plant), but also includes an accessory building with oil transfer pumps (Building 824), two large heating oil tanks (10824 and 10826), pavements, and unpaved areas. The boilers in Building 825 are used to produce steam when the otherwise available supply (from Building 260 plus offsite purchases) is insufficient to meet Hill AFB requirements. If a private entity takes over the operations at Building 825, it is expected that entity would be able to invest to modernize equipment and control systems, thereby increasing efficiency and reducing energy consumption.

This Phase I Environmental Baseline Survey (EBS) is intended to:

- document known or suspected environmental contamination of the subject property (soil, water, structures, and/or equipment);
- identify potential environmental contamination liabilities;
- establish environmental due diligence;
- develop information with which to assess health and safety risks to the extent that sampling activities were part of the project scope; and
- contribute to a process that is protective of human health and the environment.

### **1.1 Boundaries of the Property and Survey Area**

Hill AFB is located approximately twenty five miles north of downtown Salt Lake City and 7 miles south of downtown Ogden, Utah (Figure 1 of Appendix B). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Clinton, and Sunset to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

The subject property for the proposed lease would be located in the southwestern portion of the base (see Figure 2 and Figure 3, Appendix B), just south of Sixth Street. Hill AFB land use in the vicinity of the subject property consists primarily of industrial facilities and storage areas supporting aircraft maintenance activities.

The site lies within Davis County, Utah, and is a portion of a larger parcel of land (40 acres) that was purchased by the United States' (US) government in the late 1930s from Mark O. Roberts (Appendix B). The 40 acre parcel is the northwest  $\frac{1}{4}$  of the southeast  $\frac{1}{4}$  of Section 6, Township 4 North, Range 1 West, Great Salt Lake Base and Meridian.

## **2.0 SURVEY METHODOLOGY**

### **2.1 Approach and Rationale**

The Phase I EBS investigation was conducted in accordance with Department of the Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality*. Procedures documented in the AFI Chapter 2 (*Conducting Phase I of the EBS*) were followed during records searches, literature reviews, interviews, site visits, and formulation of conclusions.

Reasonably obtainable documents were reviewed, a visual site inspection was completed, and interviews were conducted with individuals familiar with the current use and past history of the site.

#### **2.1.1 Description of Documents Reviewed**

Past and present ownership and land use of the subject property was determined by reviewing the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936). A representative of the Hill AFB civil engineering squadron was contacted by telephone and by electronic mail.

Two local history books (Kaysville 1985, Leonard 1999) were reviewed at the Kaysville branch, Davis County libraries.

Hill AFB historical maps showing the area including the subject property were located and reviewed for the years 1940 through the 1980s. Portions of selected historical maps are included in Appendix B (Ogden 1943, Hill AFB 1959, Hill AFB 1967).

Historical topographic maps were located and reviewed for the years 1955, 1969, 1975, 1986, and 1992 (EDR 2009a - Appendix B).

Aerial photographs were located and reviewed for the years 1975, 1981, 1987, 1993, 1997, and 2006 (EDR 2009b - Appendix C).

Forty federal and state databases were accessed by a private database specialty vendor to search for any history of hazardous waste storage, use, treatment, or disposal, and similar records for landfills and other regulated substances such as petroleum compounds and polychlorinated biphenyls (PCBs) (EDR 2009c). The database search met the requirements of the *Standard Practice for Environmental Site Assessments*, E 1527-05, published by the American Society for Testing and Materials.

Hill AFB Installation Restoration Program (IRP) records were reviewed (Appendix D).



Hill AFB records for storage tanks were reviewed, as well as those from the State of Utah, Department of Environmental Quality, Division of Environmental Response and Remediation (DERR 2009).

The Defense Logistics Agency provided information pertaining to an adjacent property to the east of the subject property.

### **2.1.2 Property Inspections**

The objective of the site inspection is to identify any visual or olfactory evidence of environmental conditions in connection with the subject property or adjoining properties to the extent not obstructed by bodies of water, adjacent buildings, snow, or other obstacles.

The site and adjoining properties were visually inspected on November 18, 2009. A map of the subject property is included as Figure 3 of Appendix B. Selected site photographs are included in Appendix C of this report.

### **2.1.3 Personal Interviews**

Contact information for persons interviewed during data collection efforts is provided in Appendix E of this document. Typed notes from the interviews and/or e-mails documenting discussions are included in Appendix D.

The following Hill AFB personnel were contacted regarding site history for the subject property:

- Loni Johnson, Real Estate, Land Use;
- William Whitney, Boiler Operations Supervisor;
- Jarrold Case, P.E., Remedial Project Manager;
- Erik Dettenmaier, Installation Restoration Program;
- Sam Johnson, Storage Tank Program;
- Mike Berglund, Pipelines, Hydrant Fueling, and Transfer Systems;
- Bob Garland, Oil/Water Separators;
- Chris Bryan, Pesticides;
- Mike Petersen, Wastewater;
- William Kopfman, Drinking Water;
- Rodney Sanders, Asbestos, PCBs, Lead-Based Paint;
- Cary Fisher, Radon;
- Amy Butler, Historian; and
- David R. Kendziora, Historian.

#### **2.1.4 Sampling**

Sampling of environmental media was not incorporated into the scope of the project. If investigators had suspected that such environmental sampling was warranted, their course of action would have been to notify Hill AFB environmental managers for the effort to be handled by others or under a separate task assignment.

### **3.0 FINDINGS FOR THE SUBJECT PROPERTY**

#### **3.1 History and Current Use**

According to the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936), the subject property lies within a larger parcel of land (40 acres) that was purchased by the US government in the late 1930s from Mark O. Roberts (Appendix B).

According to the book *Layton Utah, Historic Viewpoints* (Kaysville 1985), the land that later became Hill AFB was committed to agricultural uses (raising turkeys and dry farmed wheat) prior to being purchased by the federal government for use by the US Army Air Corps (approximately 1938). The *History of Davis County* (Leonard 1999) similarly reports construction of Hill Field began in 1938 on a hilltop section of Davis County being used until that time as dry farmed land.

The Ogden Ordnance Depot historical map from 1943 (Appendix B) shows the subject property to be vacant. Subsequent Hill AFB maps show Building 825 to be present in its existing location in 1959 (Appendix B). An historical topographic map dated 1955 (Appendix B) shows no structures present where Building 825 currently exists. Hill AFB real estate office records indicate Building 825 was completed in May of 1958.

Most of the aerial photographs reviewed were of such poor quality that a determination could not be made regarding condition of the subject property. The first aerial photograph with acceptable resolution was dated 1971 (Appendix C). It shows Building 825 in its current location.

Hill AFB land use within and surrounding the subject property consists primarily of industrial facilities and storage areas supporting Hill AFB aircraft maintenance activities. No conditions were observed that would indicate presence of environmental contamination near the subject property.

#### **3.2 Environmental Setting**

The subject property and surrounding properties are occupied by structures, storage areas, pavements, and an unpaved area where unused Hill AFB facilities (including Building 820) were demolished. Little vegetation exists.

### **3.3 Hazardous Substances**

#### **3.3.1 Hazardous Materials and Petroleum Products**

During the site visit with Mr. William Whitney, the following items were observed in Building 825:

- water softener salt, and a brine tank holding a water-salt mixture;
- flammable and combustible materials lockers (paint, cleaning products, lubricating oil, coolant, and polyvinyl chloride cement);
- laboratory chemicals for water analyses;
- an emergency generator with fuel, oil, coolant, batteries; and
- 55-gallon plastic drums of sodium hydroxide, sodium metabisulfide, phosphate, cyclohexylamine anticorrosive.

The database searches by Environmental Data Resources (EDR) did not reveal any findings regarding the presence of hazardous materials or petroleum products for the subject property.

See Section 3.5 for information on storage tanks.

#### **3.3.2 Hazardous and Petroleum Waste**

During the site visit with Mr. William Whitney, the following items were identified:

- one can is present for holding used rags, which are collected and laundered on Hill AFB;
- when preventive maintenance and repairs are performed on equipment, including the emergency generator, all waste is removed from the building by the maintenance crews for recycling, treatment, or disposal;
- boiler blowdown solids are trapped in a sump, which is cleaned once every several years by a contractor who removes the solids and transports them off-base for proper disposal;
- boiler blowdown liquids flow to the sanitary sewer lines;
- one small oil drip from a steam turbine governor was observed, but no impact was observed other than a stained concrete floor.

The database searches by EDR did not reveal any findings regarding the presence of hazardous waste or petroleum waste for the subject property.

### **3.4 Installation Restoration Program Contamination**

#### **3.4.1 Soil**

A 1997 report (Montgomery 1997) discussed removal of pipes (the pipes were then replaced) that connected the boiler plant to the nearby heating oil tanks (10824 and 10826). Soil samples were collected in several locations beneath the sections of pipe that were removed. Analytical results indicated elevated levels of petroleum hydrocarbons and volatile organic compounds (VOCs) in several locations. The conclusions and recommendations section of the report stated:

During the Building 825 oil conveyance pipeline removal, evidence of soil staining was encountered beneath various pipe-trench connection points. Samples collected from the stained areas contained elevated levels of total extractable petroleum hydrocarbons, and benzene ethylbenzene toluene xylenes and naphthalene (BTEXN) constituents. Although the vertical extent of soil staining is unknown, it is unlikely that contamination has reached groundwater located approximately 70 feet beneath the site. In 1993, a groundwater sample was collected from a piezometer installed south of Building 825. No BTEXN constituents were detected in the sample.

No construction or other activity that would disturb soil or interfere with remedial action equipment or facilities should occur without concurrence of Hill AFB environmental managers and attorneys.

#### **3.4.2 Groundwater**

Since depth to groundwater is approximately 70 feet below ground surface (bgs) (Montgomery 1997), future activities on the subject property would not be expected to contact groundwater.

### **3.5 Storage Tanks**

#### **3.5.1 Above Ground Storage Tanks**

Three above ground storage tanks (ASTs) were observed during the site visit. Heating oil storage tank 10824 has a capacity of 80,000 gallons. Heating oil storage tank 10826 has a capacity of 66,000 gallons. These two ASTs are positioned over concrete secondary containment structures. One 250-gallon diesel AST is present to fuel the emergency generator. This tank is encased within concrete, providing its own secondary containment.

### **3.5.2 Underground Storage Tanks**

The Hill AFB underground storage tank (UST) program does not list any USTs for the subject property.

The leaking UST database maintained by DERR does not provide specific locations for releases on Hill AFB (DERR 2009). The only three “open” (not remediated) UST releases on Hill AFB were discussed with Ms. Robin Jenkins of DERR on November 9, 2009. None of these three releases is located on or adjacent to the subject property.

### **3.5.3 Pipelines, Hydrant Fueling, and Transfer Systems**

A buried natural gas pipeline supplies fuel to the boilers in Building 825. Buried fuel lines connect the two large fuel oil tanks to the transfer building (Building 824) and from there to Building 825. A buried fuel line connects the 250-gallon diesel tank to Building 825.

The Hill AFB *Liquid Fuels System* map (Hill AFB 2000) did not indicate presence of any other pipelines, hydrant fueling, or transfer systems on or adjacent to the subject property.

## **3.6 Oil/Water Separators**

Mr. Bob Garland did not indicate any current or former presence of oil/water separators on or adjacent to the subject property.

## **3.7 Pesticides**

Mr. Chris Bryan reported the subject property receives occasional spraying for wasps and spiders, and cracks in the pavement receive spot treatments for weeds.

## **3.8 Medical or Biohazardous Waste**

Based on historical use of the subject property, no current or former presence of medical or biohazardous waste was suspected.

## **3.9 Ordnance**

Based on historical use of the subject property, no current or former presence of ordnance was suspected.

### **3.10 Radioactive Wastes**

Based on historical use of the subject property, no current or former presence of radioactive materials or waste was suspected.

### **3.11 Solid Waste**

Uncontaminated trash is hauled away by pickup truck and placed in an on-base dumpster.

### **3.12 Groundwater**

See the groundwater discussion in Section 3.4.2.

### **3.13 Wastewater Treatment, Collection, and Discharge**

Mr. Mike Petersen reported Building 825 is connected to a sanitary sewer (lines lead off-base to North Davis Sewer District).

Storm drains exist around the perimeter of Building 825.

### **3.14 Drinking Water Quality**

Mr. William Kopfman reported drinking water supply lines are connected to Building 825. The water supplied by this system is tested and meets drinking water quality standards.

### **3.15 Asbestos**

Mr. Rodney Sanders reported that Building 825 has not been surveyed for asbestos. If above-ground asbestos does exist, the most likely locations would be insulation on steam lines and boilers. Below-ground asbestos could exist as transite pipe and rickwell casing. When Building 820 was demolished and removed, the foundations were also removed, and no asbestos-containing pipes were observed.

### **3.16 Polychlorinated Biphenyls**

Mr. Rodney Sanders reported that a base contractor was hired to remove PCBs base wide in the 1990s. Presence of PCBs is not suspected.

### **3.17 Radon**

Ms. Cary Fisher reported a radon assessment performed in Hill AFB homes in the late 1980s indicated there were no problems with radon in Hill AFB homes. No other radon studies have been performed on Hill AFB. Housing was assumed to be the worst case (based on hours per year occupancy) and no radon concerns were identified.

### **3.18 Lead-Based Paint**

Mr. Rodney Sanders reported lead-based paint is present in Building 825.



## **4.0 FINDINGS FOR ADJACENT PROPERTIES**

The EDR database searches were conducted to identify occurrences of storage and releases of hazardous materials, hazardous waste, and other regulated substances for nearby properties.

Hill AFB was identified by EDR as being present on multiple federal databases dealing with generation, storage, treatment, disposal, corrective action, and/or priority cleanup of hazardous waste, but specific locations on the base were not mapped by EDR. Hill AFB environmental managers and documents were consulted to obtain specific details regarding locations and types of hazardous materials, hazardous waste, or other regulated substances either on or in close proximity to the subject property. These details are presented in Sections 3.1 - 3.18 of this document.

The Hill AFB map from 1959 (Appendix C) indicates that a storage area existed to the east of the subject property at that time. Mr. Andrew B. Konrady Jr. reported that since 1991, this storage area has been controlled by the Defense Logistics Agency (DLA). The majority of the equipment stored in this fenced area consists of aircraft parts. Any drips or leaks of oil or other regulated liquids would be identified, stopped, and the liquids would be removed.

### **4.1 Land Uses**

On-base nearby land use surrounding the subject property consists primarily of industrial facilities and storage areas supporting aircraft maintenance activities.

### **4.2 Surveyed Properties**

The adjacent properties were visually inspected on November 18, 2009. No conditions were observed that would indicate presence of environmental contamination near the subject property.

## **5.0 APPLICABLE REGULATORY COMPLIANCE ISSUES**

### **5.1 List of Compliance Issues**

No construction or other activity that would disturb soil or interfere with remedial action equipment or facilities should occur without concurrence of Hill AFB environmental managers and attorneys.

### **5.2 Description of Corrective Actions**

No needed corrective actions were identified for the subject property. Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead-based paint is disturbed or removed.

### **5.3 Estimates of Various Alternatives**

This section is not applicable to the current document.

## **6.0 CONCLUSIONS, DATA GAPS**

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead-based paint is disturbed or removed.

### **6.1 Facility Matrix**

Building	Facility	Identified Conditions	Property Category Code
Not applicable	All of the subject property	Soils, asbestos, lead-based paint	3*

\* Category 3 properties are areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require removal or remedial response).

### **6.2 Property Categories Map (If More Than One Category)**

All of the subject property is designated Category 3. Therefore, no property categories map was prepared.

### **6.3 Resources Map**

Resource inventories are not required by AFI 32-7066, and were outside the scope of this investigation. No resource map was prepared.

### **6.4 Data Gaps**

No data gaps were identified for the subject property.

## **7.0 RECOMMENDATIONS**

No construction or other activity that would disturb soil or interfere with remedial action equipment or facilities should occur without concurrence of Hill AFB environmental managers and attorneys.

Based upon the results of the EBS, no other recommendations were prepared relative to the proposed lease at this time.

## 8.0 CERTIFICATIONS

### Certification of the Environmental Baseline Survey

Streamline Consulting, LLC has conducted this environmental baseline survey on behalf of the Air Force. Streamline Consulting, LLC has reviewed all appropriate records made available, and conducted visual site inspections of the selected facilities following an analysis of information during the record search. The information contained within the survey report is based on records made available and, to the best of Streamline Consulting, LLC's knowledge, is correct and current as of the date shown below.

Certified by: Randal B. Keli Date: 12/28/09  
Project Manager

Approved by: Harry Briesmaster III Date: 16 Feb 10  
HARRY BRIESMASTER III, YF-03, DAF  
Director, 75th Civil Engineer Group

### Certification of PCB Clearance

The subject property is in compliance with 40 CFR 761 as outlined below:

Based on information provided by the Hill AFB SABER program manager (Mr. Rodney Sanders, who formerly tracked the presence of asbestos, lead-based paint, and PCBs on Hill AFB), there is no known PCB contaminated soil, wastes, or unserviceable equipment remaining on the existing property.

Certified by: Randal B. Keli Date: 12/28/09  
Project Manager

Approved by: Harry Briesmaster III Date: 16 Feb 10  
HARRY BRIESMASTER III, YF-03, DAF  
Director, 75th Civil Engineer Group

### **Certification Related To Contamination**

The subject property contains known hazardous substances as that term is defined in the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601), as amended, or other contamination as specified by the Resource Conservation and Recovery Act of 1976, the implementing Environmental Protection Agency regulations (40 CFR Parts 261, 262, 263, and 761), and the Federal Property Management Regulations (41 CFR Part 101-47).

Related to known or potential contamination, a complete search of agency files has revealed that hazardous substances as that term is defined in the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601) as amended, were stored for one year or more, known to have been released, or were disposed on the subject property.

Ethylbenzene:      Chemical Abstract Service (CAS) number = 100-41-4  
                            RCRA hazardous waste code = none  
                            Quantity = unknown  
                            Date of release = prior to 1997  
                            Remedial action = none

Xylenes:            CAS number = 1330-20-7  
                            RCRA hazardous waste code = U239  
                            Quantity = unknown  
                            Date of release = prior to 1997  
                            Remedial action = none

Naphthalene:      CAS number = 91-20-3  
                            RCRA hazardous waste code = U165  
                            Quantity = unknown  
                            Date of release = prior to 1997  
                            Remedial action = none

Asbestos:            CAS number = 1332-21-4  
                            RCRA hazardous waste code = none  
                            Quantity = unknown  
                            Date of release = affixed to structure  
                            Remedial action = none

Lead:                CAS number = 7439-92-1  
                            RCRA hazardous waste code = D008  
                            Quantity = unknown  
                            Date of release = affixed to structure  
                            Remedial action = none

The Air Force has taken all remedial action currently necessary to protect human health and the environment with respect to any hazardous substances released, disposed, or stored on the subject property.

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead-based paint is disturbed or removed. No construction or other activity that would disturb soil or interfere with remedial action equipment or facilities should occur without concurrence of Hill AFB environmental managers and attorneys.

Certified by:

Randal B. Kle  
Project Manager

Date: 12/28/09

Approved by:

Harry Briesmaster III  
HARRY BRIESMASTER III, YF-03, DAF  
Director, 75th Civil Engineer Group

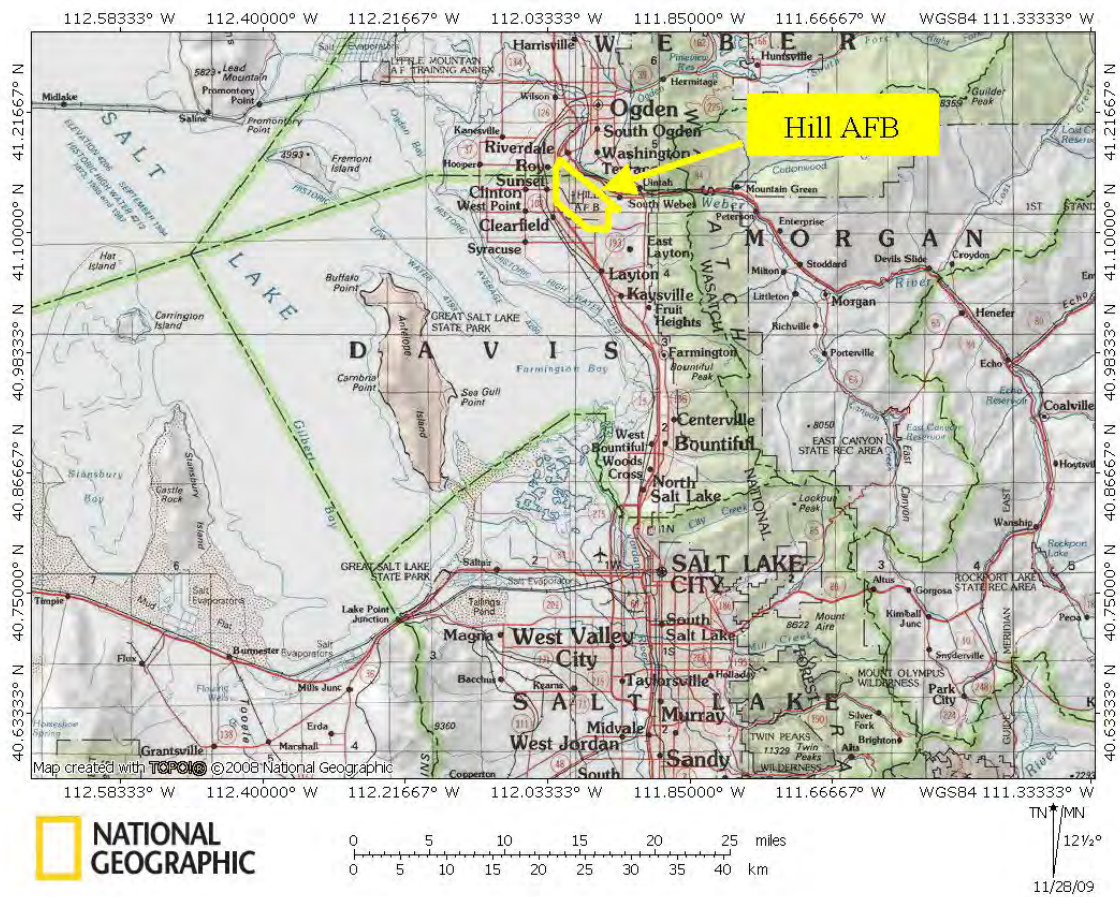
Date: 16 Feb 10

## **APPENDIX A      LIST OF ACRONYMS**

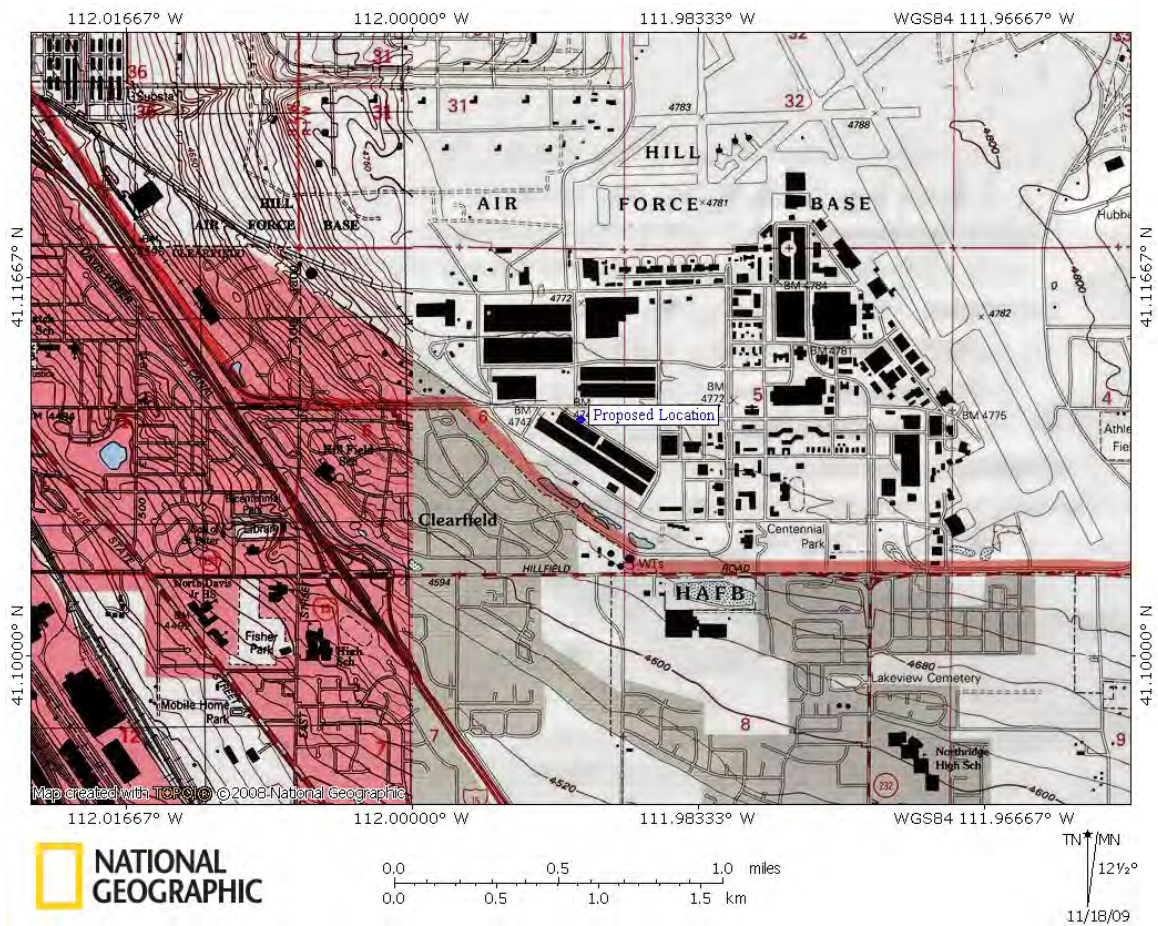
AFB	Air Force Base
AFI	Air Force Instruction
AST	Above Ground Storage Tank
bgs	Below Ground Surface
BTEXN	Benzene Toluene Ethylbenzene Xylenes and Naphthalene
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
DERR	Division of Environmental Response and Remediation (state of Utah)
DLA	Defense Logistics Agency
EBS	Environmental Baseline Survey
EDR	Environmental Data Resources
IRP	Installation Restoration Program
PCB	Polychlorinated Biphenyl
US	United States
UST	Underground Storage Tank
VOC	Volatile Organic Compound



**APPENDIX B**  
**FIGURES AND MAPS**

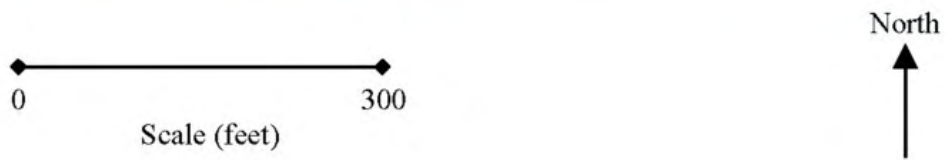


**Figure 1: Hill AFB Location Map**



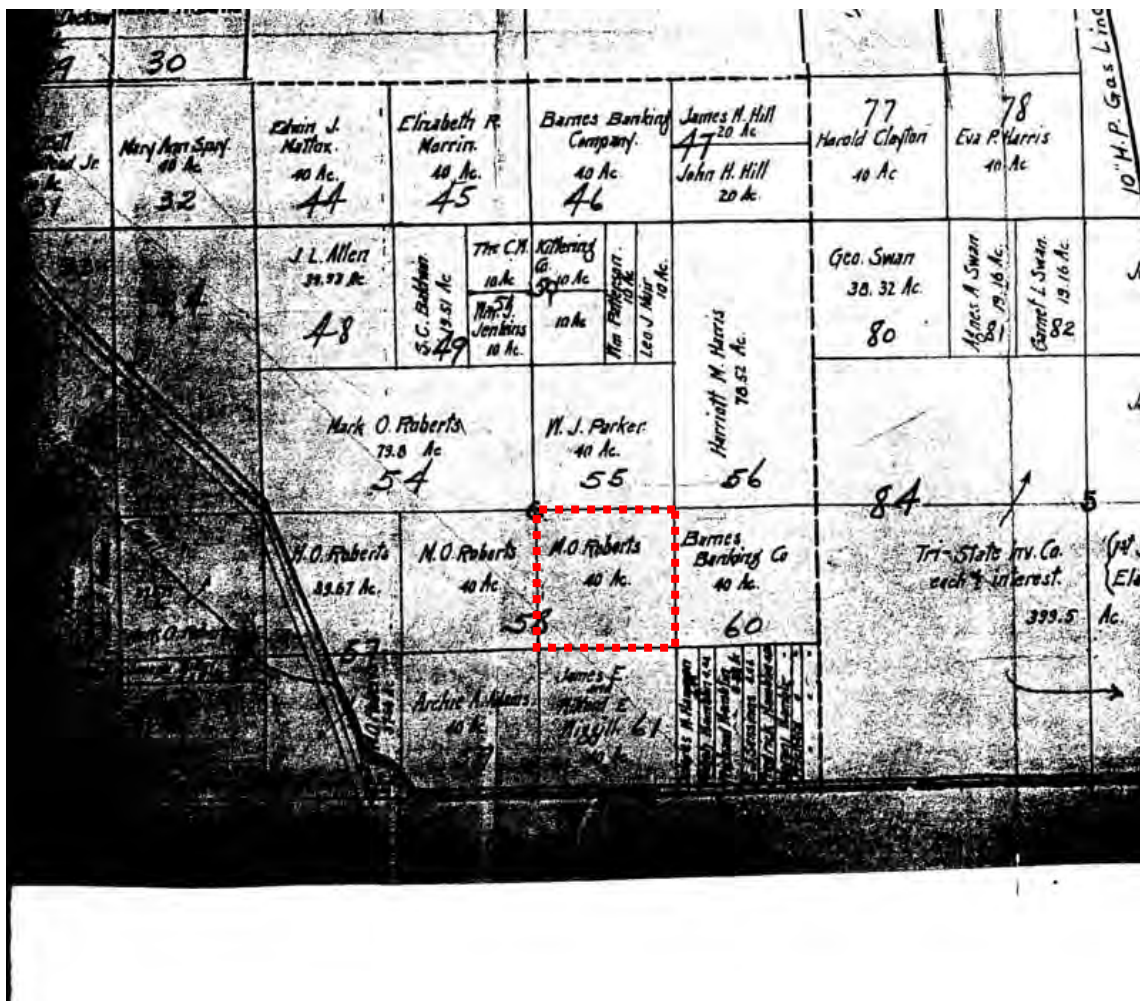
**Figure 2: Location of the Subject Property for the Proposed Lease**



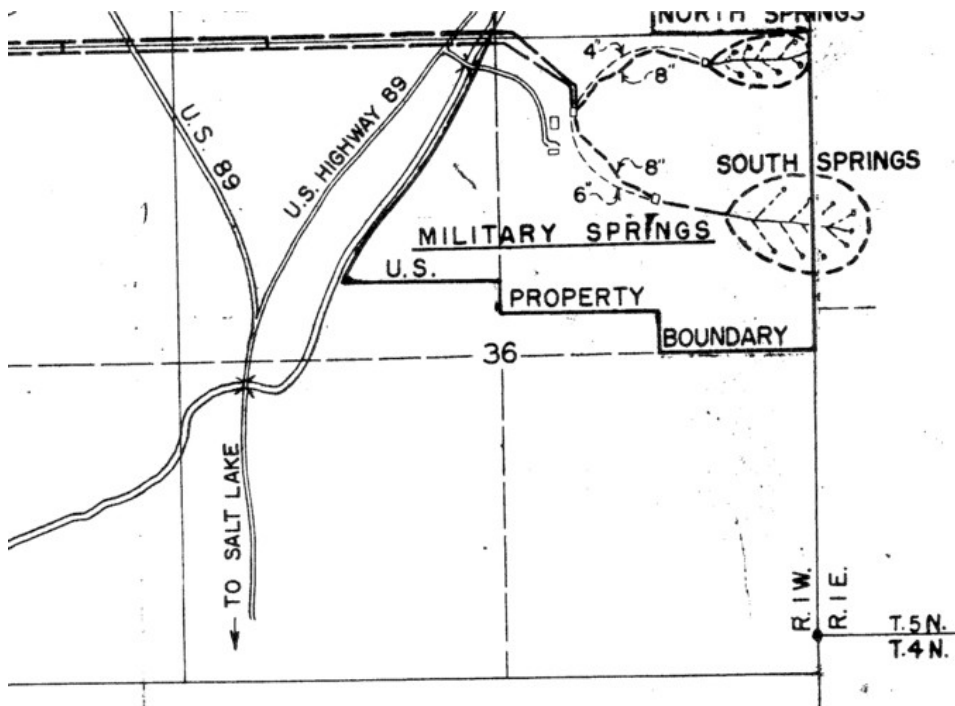


**Figure 3: Perimeter of the Subject Property**

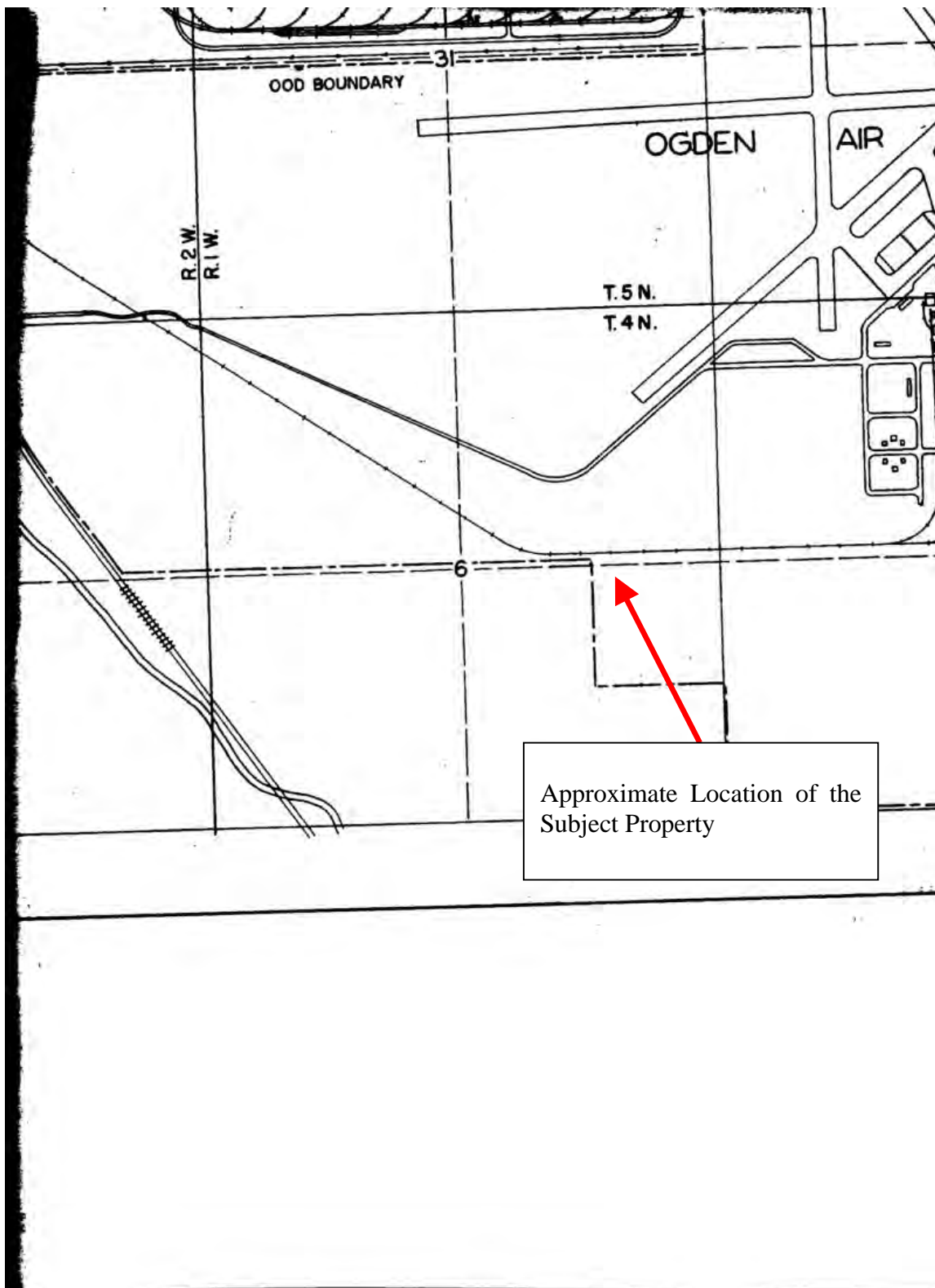




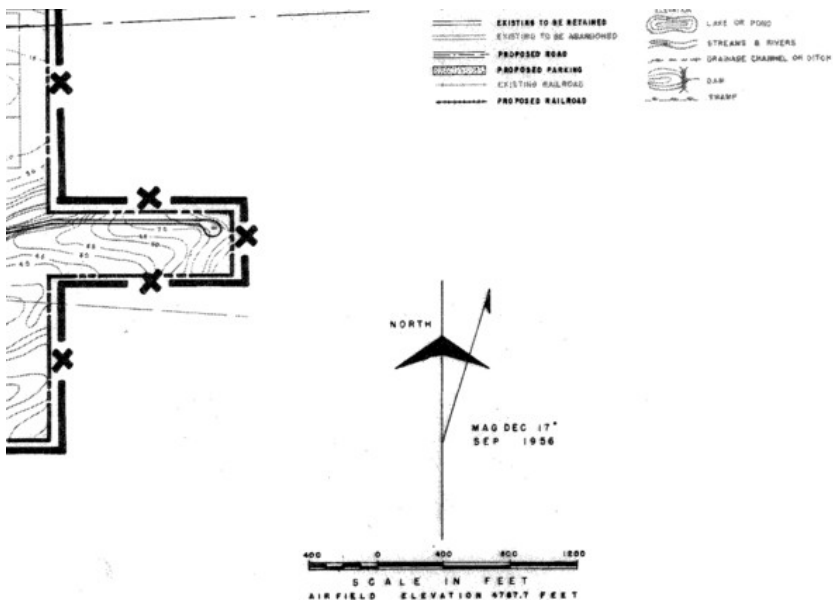
Dashed line indicates the northwest 1/4 of the southeast 1/4 of Section 6, Township 4 North, Range 1 West, Great Salt Lake Base and Meridian.



REVISIONS		WATER WORKS SYSTEM OGDEN ORDNANCE DEPOT		
2-8-43		D'FTSMAN	TRACER	ENGINEER <i>JCA</i>
		CHECKER	CHECKER <i>R. 12/4/42</i>	DATE 5-6-41
DRG. PERTAINS TO		SUBMITTED		
		CAPT. ORD. DEPT. U.S.A.		
		EXAMINED: <i>E. V. Little</i> CAPT. ORD. DEPT., U.S.A.		
		APPROVED: <i>J. Worthen Proctor</i> LT. COL. ORD. DEPT., U.S.A.		
SCALE: 1"=1,000'		OGDEN ORDNANCE DEPOT		
1.1-E-3				







## TY LEGEND

FENCING  
GATE  
SENTRY HOUSE  
CONTROL & IDENTIFICATION  
GUARD TOWER

1 STRANDS BARBED WIRE ABOVE  
5 STRANDS BARBED WIRE ABOVE  
5 STRANDS BARBED WIRE ABOVE  
5 STRANDS BARBED WIRE ABOVE  
NCE ( HOG WIRE )(5'WHEN NOTED)  
BARBED WIRE, STEEL POSTS

CURITY FACILITIES.  
F FACILITY  
AREA USE TAB F-1.

DEPARTMENT OF THE AIR FORCE  
ASST CHIEF OF STAFF / INSTALLATIONS — WASHINGTON, D. C.

OGDEN AIR MATERIEL AREA

MASTER PLAN  
SECURITY

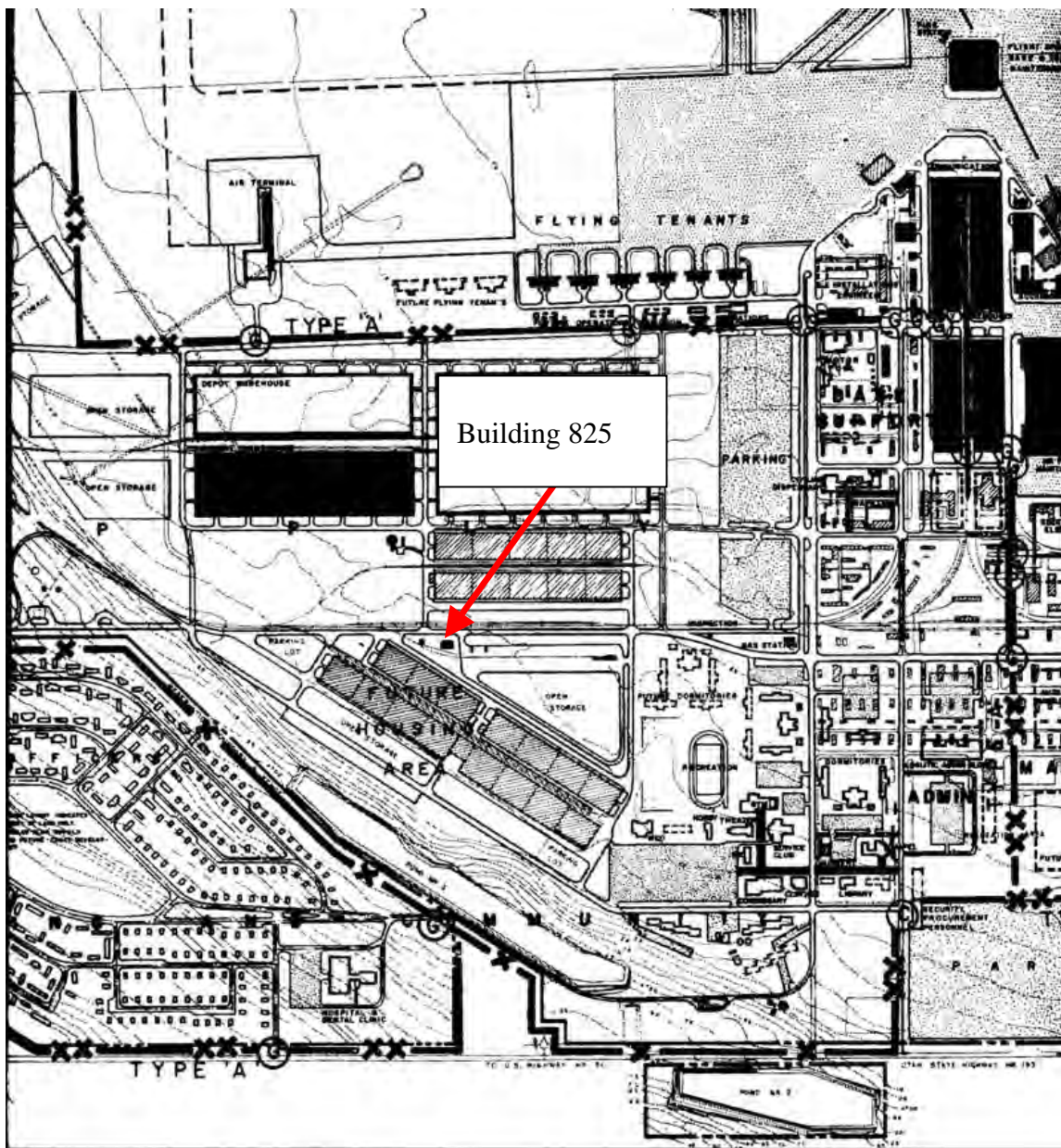
HILL AIR FORCE BASE  
HILL AIR FORCE BASE, UTAH

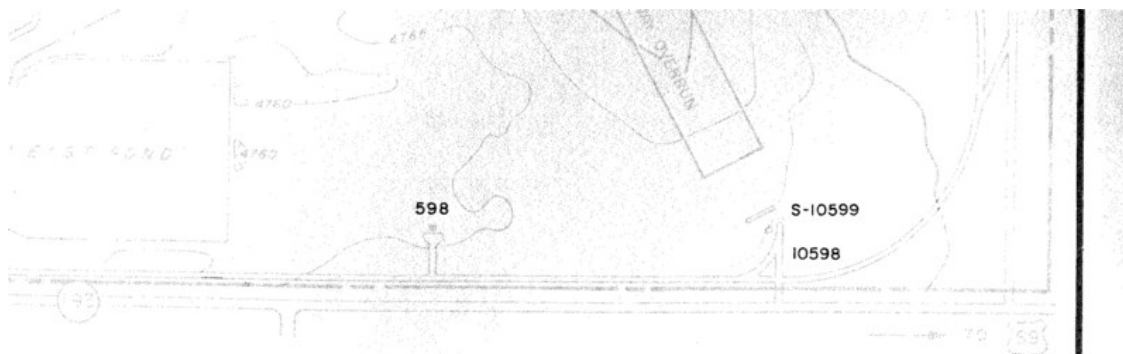
SCALE 1 INCH = 800 FT DATE 23 JAN 1959

MASTER PLANNING DIRECTIVE: 57-6

LEO A. DALY CO. ARCHITECTS & ENGINEERS  
SAN FRANCISCO OMAHA SEATTLE ST. LOUIS

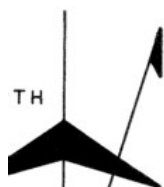
TAB  
NR  
H  
SHEET





#### SOURCE OF INFORMATION

MAP COMPILED FROM GOVERNMENT SOURCE MATERIAL WHICH USED PHOTOGRAMMETRIC METHOD, WITH GRID BASED ON UTAH COORDINATE SYSTEM, AND UNIVERSAL TRANSVERSE MERCATOR GRID. HORIZONTAL AND VERTICAL CONTROL BY U.S.G.S., U.S.C. & G.S. AND U.S.C.E. WITH MINOR CORRECTIONS BY U.S. GEOLOGICAL SURVEY. (TRANSVERSE MERCATOR PROJECTION.)



MAG DEC 16° 30' 00"E.  
JAN 1967

400 800 1200

IN FEET  
VATION 4787.7 FEET

REV	DATE	DESCRIPTION	INITIAL
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#### PLAN REVISIONS

**DEPARTMENT OF THE AIR FORCE**  
ASST. CHIEF OF STAFF / INSTALLATIONS - WASHINGTON D.C.

OGDEN AIR MATERIEL AREA  
**MASTER PLAN**  
**BASIC LAYOUT PLAN**

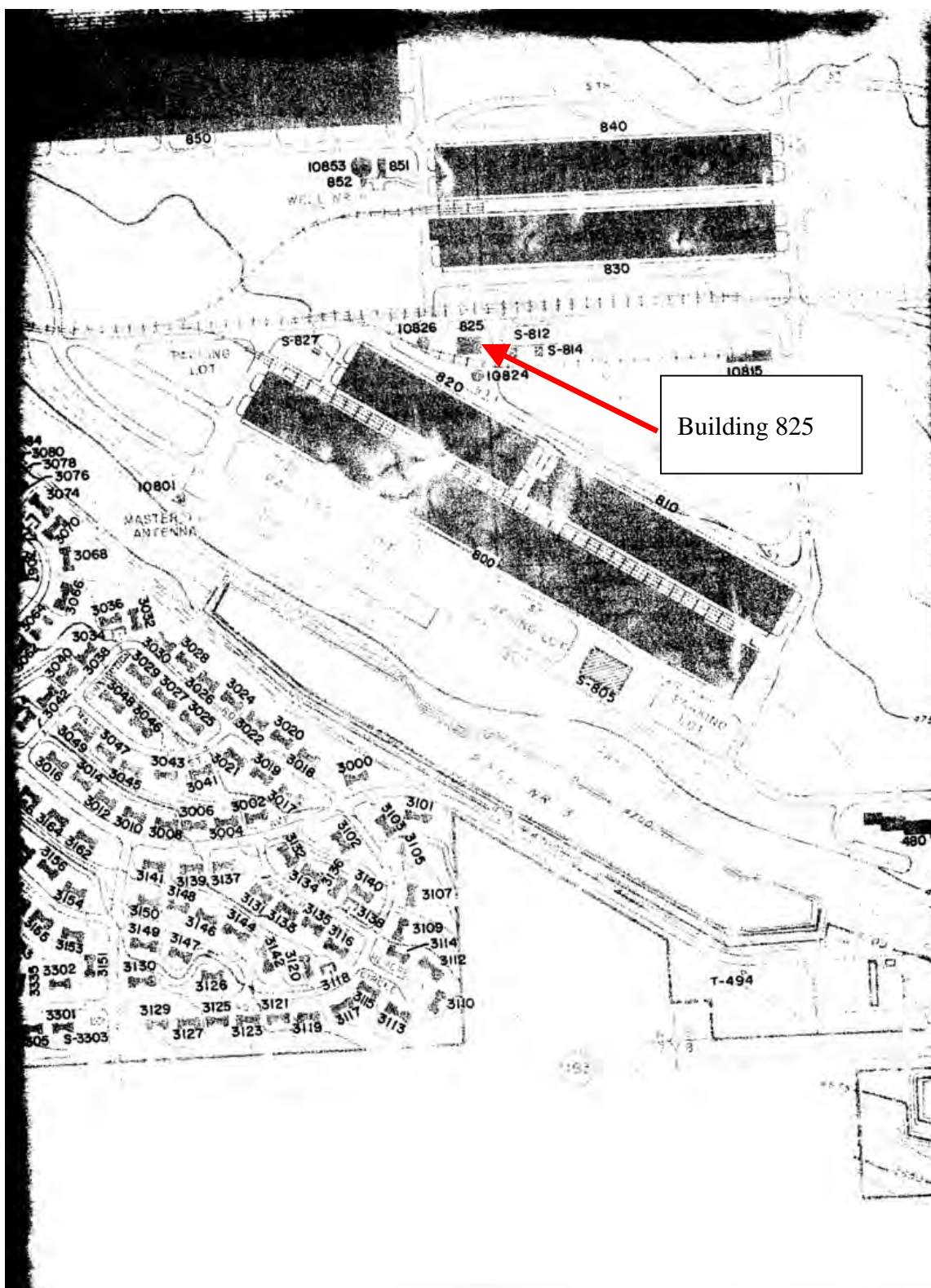
**HILL** AIR FORCE BASE  
HILL AIR FORCE BASE, UTAH

SCALE: 1 INCH = 400 FT. DATE: JANUARY, 1967

TAB  
NR

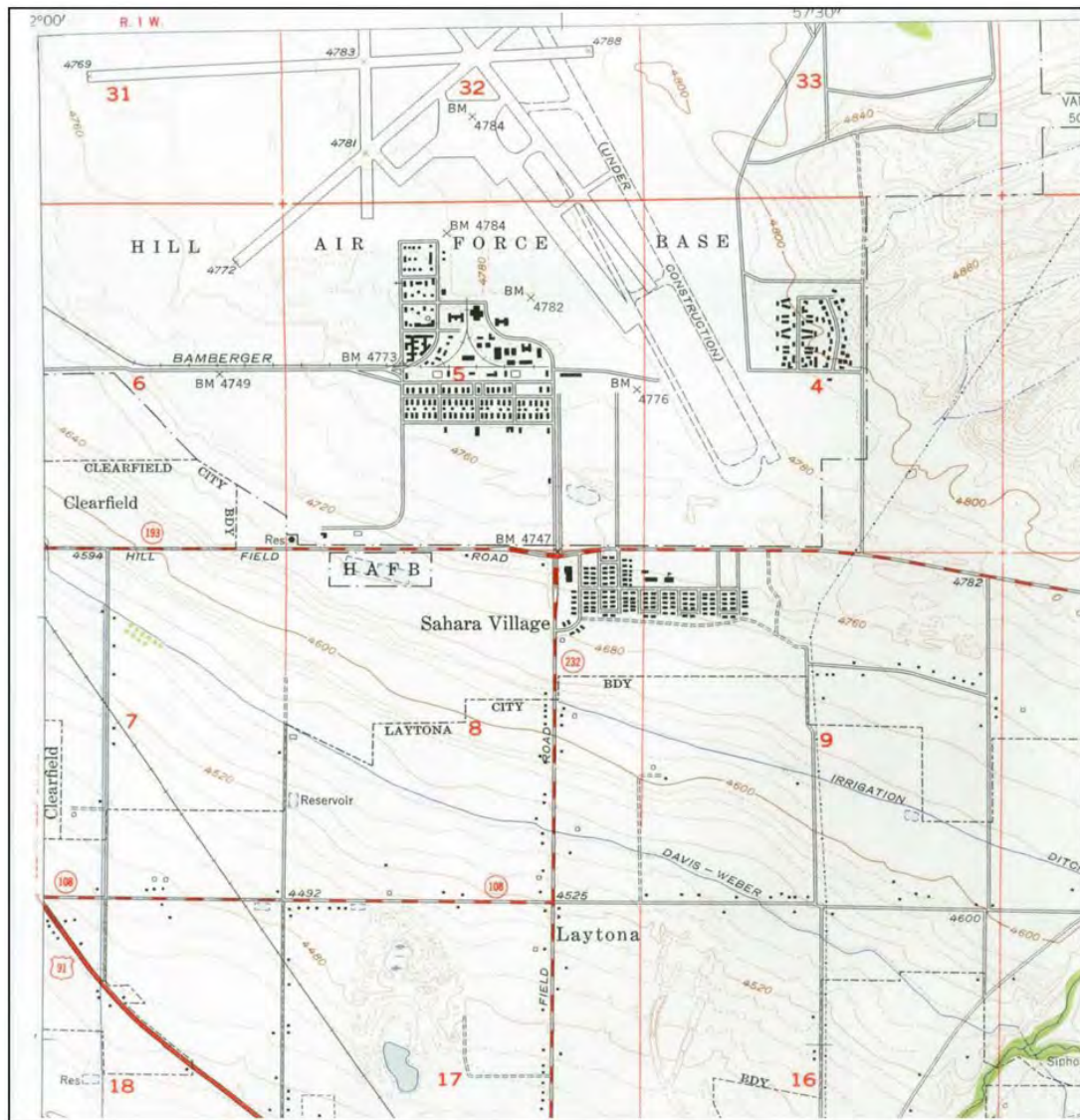
**C-1**

E. TORKELSON CO.





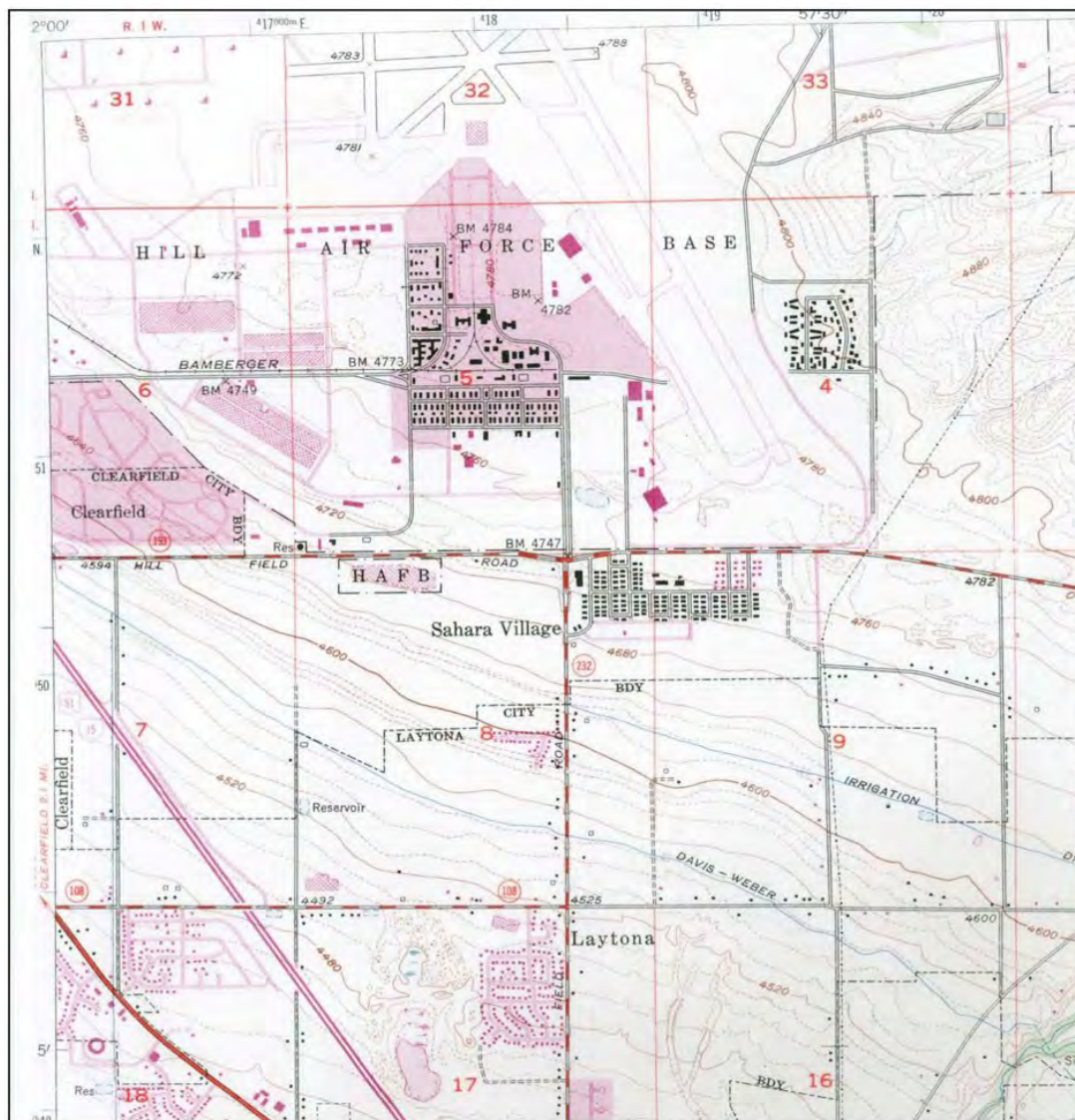
# Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: Kaysville, UT MAP YEAR: 1955</p>	<p>SITE NAME: Building 825 Boiler Plant ADDRESS: 7525 6th Street Hill AFB, UT 84056 LAT/LONG: 41.1104 / 111.9904</p>	<p>CLIENT: Streamline Consulting, LLC CONTACT: Randal Klein INQUIRY#: 2646327.4 RESEARCH DATE: 11/30/2009</p>
	<p>SERIES: 7.5 SCALE: 1:24,000</p>		

Note: Two representative historical topographic maps have been included, one showing the subject property as vacant, one showing the existence of Building 825.

# Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: Kaysville, UT MAP YEAR: 1969 PHOTOREVISED FROM: 1955 SERIES: 7.5 SCALE: 1:24,000</p>	<p>SITE NAME: Building 825 Boiler Plant ADDRESS: 7525 6th Street Hill AFB, UT 84056 LAT/LONG: 41.1104 / 111.9904</p>	<p>CLIENT: Streamline Consulting, LLC CONTACT: Randal Klein INQUIRY#: 2646327.4 RESEARCH DATE: 11/30/2009</p>
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**APPENDIX C**  
**AERIAL AND SITE PHOTOS**

Most of the aerial photographs reviewed were of such poor quality that a determination could not be made regarding condition of the subject property.

The first aerial photograph with acceptable resolution that shows Building 825 (dated 1971) is shown on the following page.





INQUIRY #: 2646327.5

YEAR: 1971

| = 750'





Photographs Taken November 18, 2009



Brine tank, water entering floor drain



Hazardous material storage



One of two large oil tanks



Area where Building 820 formerly existed



DLA storage, adjacent property to the east



Access manhole to boiler blowdown sump

**APPENDIX D      INTERVIEWS AND ADDITIONAL RESEARCH**  
*(see Appendix E for addresses and phone numbers)*

Discussions and site tour with William Whitney, boiler operations supervisor  
November 18, 2009

Hazardous Materials stored indoors in 55-gallon plastic drums  
sodium hydroxide  
sodium metabisulfide  
phosphate  
cyclohexylamine anticorrosive

Water softener salt, and a brine tank holding a water-salt mixture

Flammable and combustible materials lockers (paint, cleaning products, lubricating oil, coolant, polyvinyl chloride cement)

Laboratory chemicals for water analyses

One emergency generator with fuel, oil, coolant, batteries

Hazardous Waste: boiler blowdown consists of solids and liquids. Solids are trapped in a sump, which is cleaned once every several years. A contractor removes the solids and transports them off-base for proper disposal. Liquids flow to the sanitary sewer lines. There is 1 can for collecting used rags, which are collected and laundered on base. Any used oil is sent for recycling. When preventive maintenance and repairs are performed on the emergency generator, all waste is removed from the building by the maintenance crews for recycling, treatment, or disposal.

One small oil drip from a steam turbine governor was observed. No impact was observed other than stained concrete floor.

Solid Waste: uncontaminated trash is hauled away by pickup truck, placed in an on-base dumpster.

Primary fuel is natural gas.

Petroleum: One 250-gallon diesel tank for the emergency generator, encased within concrete, providing its own secondary containment

Wastewater is drained by sewer lines and floor drains, which are routed to the North Davis Sewer District.

The white storage shed contains fire extinguishers and a typical propane grill.

To the south (toward former Building 820) is a row of water valves.

**Electronic Mail, Erik Dettenmaier**

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-----Original Message-----

From: Dettenmaier, Erik M CTR USAF AFMC 75 CEG/CEVR

Sent: Thursday, November 19, 2009 3:45 PM

To: Smith, Shannon C Civ USAF AFMC 75 CEG/CEVR

Subject: RE: Area Surrounding Bldg 825

Shannon,

The results of soil and ground water investigations around building 825 do not indicate much if any contamination. I don't see any restoration concerns at this site.

Cheers,

Erik

**Interview with Mike Berglund****November 18, 2009**

Reviewed the *Liquid Fuels System* map, dated September 25, 2000.

Building 825: fuel tanks are present at this location; no other indication of pipelines, hydrant fueling, or transfer systems.

**Electronic Mail, Loni Johnson**

---

From: Johnson, Loni Civ USAF AFMC 75 CEG/CEAAR

[Loni.Johnson@HILL.af.mil]

Sent: Wednesday, November 18, 2009 2:02 PM

To: rbklein@streamlineut.com

Subject: RE: Building 825 EBS - Historical Use Query

Randy,

As far as our records show, 825 has always been a heating facility and 10824 and 10826 are heating oil storage tanks in support of 825. As far as 820 is concerned, I don't have a good answer for you. It's main designation has always been a warehouse but there have been different shops located in it from time to time over the years. Just before demo there was a comm/electrical equipment repair shop in a portion of it. But I don't have a good history for you.

Loni

**Electronic Mail, Bob Garland**

---

From: Garland, Bob Civ USAF AFMC 75 CES/CLEA [Bob.Garland@HILL.af.mil]  
Sent: Wednesday, November 18, 2009 12:37 PM  
To: rbklein@streamlineut.com  
Subject: RE: Building 825 - Oil Water Separators

Randy, that's an old picture, both warehouses are gone. The boiler plant (825) and the two diesel tanks are still there. The two diesel tanks hold backup fuel for the boiler. Normally they burn natural gas. Anyway, there are no OWSs in the outlined area.

Bob Garland  
75 CEG ESOH Coordinator  
801-777-4924

**Interview, Chris Bryan****November 18, 2009**

At Building 825 and surrounding areas, cracks in the pavement receive spot treatments for weeds. Occasional spraying occurs for wasps and spiders.

**Electronic Mail, Mike Petersen**

---

From: Petersen, Mike R Civ USAF AFMC 75 CEG/CEVC  
[Mike.Petersen@HILL.af.mil]  
Sent: Monday, November 16, 2009 2:48 PM  
To: rbklein@streamlineut.com  
Subject: RE: Sewer Connections, Bldg 825

Correct as far as we can tell from the map.

-----Original Message-----

From: Randal B. Klein [mailto:rbklein@streamlineut.com]  
Sent: Monday, November 16, 2009 2:23 PM  
To: Petersen, Mike R Civ USAF AFMC 75 CEG/CEVC  
Subject: Sewer Connections, Bldg 825

Mike,

These are my telephone notes. Please reply to confirm they are correct, or send corrections if necessary. Building 825 is connected to sanitary sewer (lines lead off-base to North Davis Sewer District).

Storm drains exist around the perimeter of Building 825.

Thanks,  
Randy

**Interview, William Kopfman**

**November 18, 2009**

At Building 825, drinking water lines are present.  
The Hill AFB water supply system is tested and meets drinking water quality standards.

**Interview, Rodney Sanders**

**December 3, 2009**

Asbestos: Building 825 has not been surveyed for asbestos. If above-ground asbestos does exist, the most likely locations would be insulation on steam lines and boilers. Below-ground asbestos could exist as transite pipe and rickwell casing.

PCBs: A base contractor was hired to remove PCBs base wide in the 1990s. Presence of PCBs is not suspected.

Lead-based paint: Lead-based paint is present in Building 825.

Building 820 has been demolished and removed. When the foundations were removed, no transite pipe (ACM) was observed.

**Interview and Electronic Mail, Cary Fisher**

Telephone call update 11/12/09 with Cary Fisher: No other radon studies have been performed on Hill AFB. Housing was assumed to be the worst case (based on hours per year occupancy) and no radon concerns were identified.

\*\*\*\*\*

From: Fisher Cary Civ 75 MDG/SGPB [Cary.Fisher@HILL.af.mil]  
Sent: Monday, November 18, 2002 12:12 PM  
To: 'rbklein@streamlineut.com'  
Subject: RE: EBS for Proposed Weber Basin Fluoridation Station

The radon assessment done in HAFB homes in the late 1980's indicated there were no problems with radon in HAFB homes.

**Electronic Mail, Andrew B. Konrady Jr.**

**(excerpt)**

-----Original Message-----

From: Konrady, Andrew B CIV DLA DDHU [mailto:andrew.konrady@dla.mil]

Sent: Tuesday, December 08, 2009 7:45 AM

To: Simbro, Barbara L Civ DOD DLA DLA-OO/AC

Subject: RE: Need Help With DLA

As far as what info DDHU can provide:

- Assets stored in the lot - Majority are aircraft parts
- If there are drips or leaks of oil, etc, DLA/DDHU is responsible for clean-up
- Comments go back to 1991 when DRMD 902 took effect.

All other info would have to come from the base.

Hope this helps..

Andy

Andrew B. Konrady Jr.

Director, DDHU

DSN: 777-4582

Com: (801) 777-4582

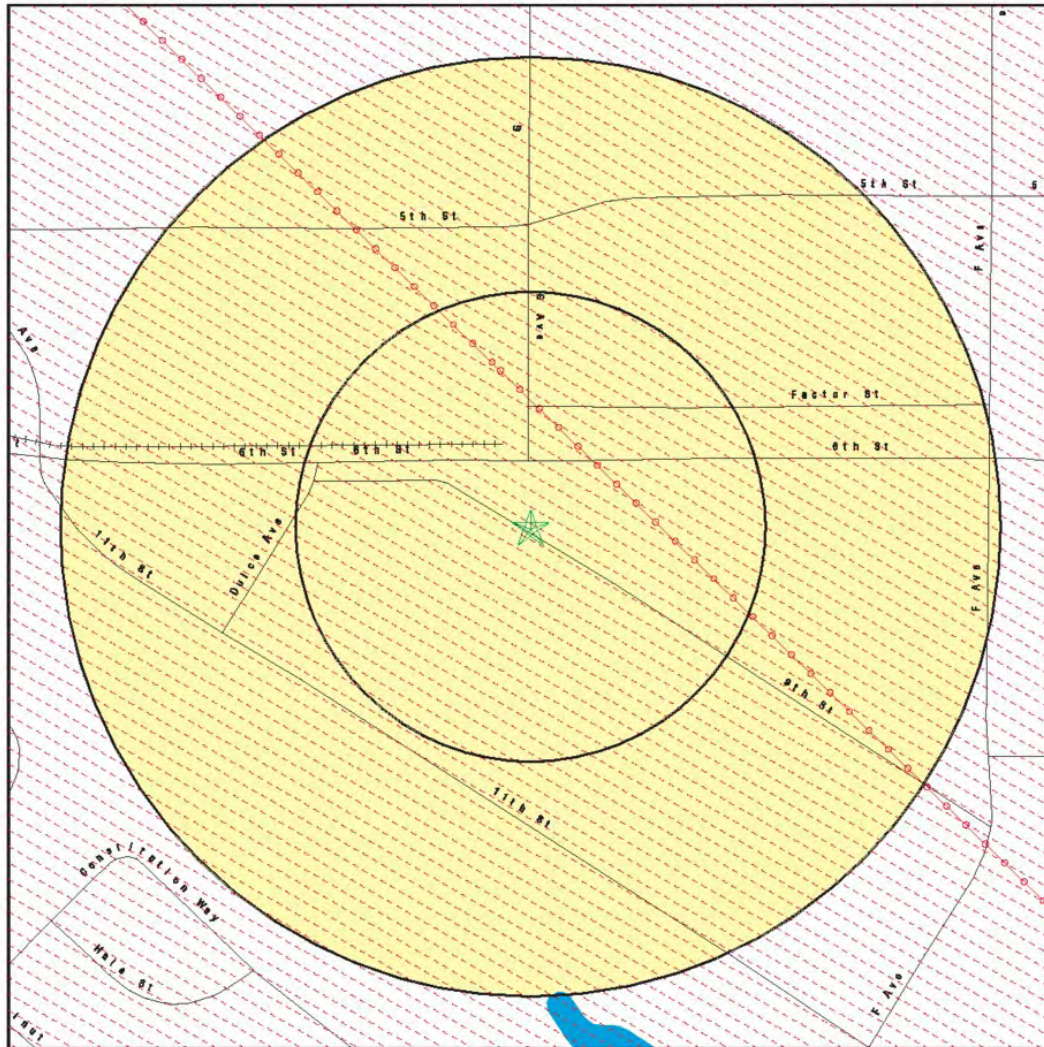
Cell: (801) 698-0463

Fax: (801) 777-4317; DSN: 777-4317

Email: andrew.konrady@dla.mil



# DETAIL MAP - 2646327.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ▲ Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Building 825 Boiler Plant	CLIENT: Streamline Consulting, LLC
ADDRESS: 7525 8th Street	CONTACT: Randal Klein
Hill AFB UT 84056	INQUIRY #: 2646327.2s
LAT/LONG: 41.1104 / 111.9904	DATE: November 25, 2009 11:44 am

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The EDR report showed no results in the vicinity of the subject property.





TABLE 2

## ANALYTICAL RESULTS FOR BUILDING 825

Sample ID	SS 825 H1	SS 825 H2	SS 825 P1	SS 825 P2	SS 825 P3	SS 825 P4	SS 825 P5	SS 825 P6
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethyl benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	3.0	<0.2	<0.2	<0.2	13.2	<0.2	<0.2	<0.2
TPH (as Diesel)	22	<1	<1	<1	6960	551	<1	<1
Total Lead	<4	<4	<4	<4	<4	<4	<4	<4
Sample ID	SS 825 R1	SS 825 R2	SS 825 R3	SS 825 R4	SS 825 T1	SS 825 T2	SS 825 T3	
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Ethyl benzene	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	0.5	
Xylene	<0.2	1.4	<0.2	<0.2	<0.2	<0.2	6.9	
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Naphthalene	<0.2	78.3	28.4	<0.2	<0.2	<0.2	16.9	
TPH (as Diesel)	<1	4730	6350	<1	<1	<1	3510	
Total Lead	<4	4.0	<4	<4	10.0	6.0	6.0	

All samples are reported in milligrams per kilogram.

ND Analyte not detected

Source: Montgomery 1997

## APPENDIX E REFERENCES

### LIST OF DOCUMENTS REVIEWED

**DERR 2009:** *Leaking Underground Storage Tank List*, Utah Division of Environmental Response and Remediation, current as of November, 2009.

**EDR 2009a:** The EDR Historical Topographic Map Report: *Building 825 Boiler Plant, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., November 25, 2009.

**EDR 2009b:** The EDR Historical Aerial Photograph Report: *Building 825 Boiler Plant, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., November 25, 2009.

**EDR 2009c:** The EDR Radius Map with GeoCheck: *Building 825 Boiler Plant, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., November 25, 2009.

**Hill AFB 1959:** *Ogden Air Materiel Area Master Plan – Security*, Hill AFB, January, 1959.

**Hill AFB 1967:** *Ogden Air Materiel Area Master Plan – Basic Layout Plan*, Hill AFB, January, 1967.

**Hill AFB 2000:** *Liquid Fuels System*, Hill AFB, September, 2000.

**Kaysville 1985:** *Layton Utah, Historic Viewpoints*, Kaysville-Layton Historical Society, 1985.

**Montgomery 1997:** *Final Building 825 Pipeline Removal*, Montgomery Watson, July, 1997.

**Leonard 1999:** *History of Davis County*, Leonard, Glen, 1999.

**Ogden 1936:** *Ownership Map of Ogden Arsenal and Vicinity*, revised January, 1936.

**Ogden 1943:** *Water Works System, Ogden Ordnance Depot, Ogden Utah*, May, 1941 (Revised 2-8-43).

## **LIST OF PERSONS AND AGENCIES CONSULTED**

Hill AFB Enhanced Use Leasing Office, OO-ALC/XP-EUL

David Bruce Evans, Energy Team, (801) 586-2889

Hill AFB History Office, OO-ALC/HO

Amy Butler, Historian, (801) 777-4006

David Kendziora, Historian, (801) 777-4002

Hill AFB Environmental Division, 75 CEG/CEV

Jarrod Case, P.E., Remedial Project Manager, (801) 777-3943

Erik Dettenmaier, Installation Restoration Program, (801) 777-3804

Sam Johnson, Storage Tank Program, (801) 775-3653

Mike Petersen, Wastewater Program, (801) 775-6904

Hill AFB Civil Engineering, 75 CEG and 75 CES

Loni Johnson, Realty Specialist, (801) 777-3550

William Whitney, Boiler Operations Supervisor, (801) 777-5581

Mike Berglund, Liquid Fuels Maintenance Technician, (801) 777-9576

Bob Garland, Env. Safety Occupational Health Coordinator, (801) 777-4924

Chris Bryan, Pest Controller, (801) 777-4427

William Kopfman, Utility Supervisor, (801) 777-3647

Rodney Sanders, SABER Program Manager (formerly Asbestos Program Manager,  
(801) 777-6782)

Hill AFB Aircraft Maintenance Group, 309 AMXG

Brad Robb, Supervisor, (801) 777-2244

Hill AFB Bioenvironmental Engineering, 75 AMDS/SGPB

Cary Fisher, Supervisor, (801) 777-1053

Defense Logistics Agency, DLA/DDHU

Andrew B. Konrady Jr., Director, (801) 777-4582

Utah Division of Environmental Response and Remediation

Robin Davis, Project Manager, (801) 536-4177